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EXAMINER

NAHAR, QAMRUN

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/706,914

Applicant(s)

DWYER, LAWRENCE

Examiner

Qamrun Nahar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This action is in response to the RCE filed on 12/16/03.
2. The rejection under 35 U.S.C. 102(b) as being anticipated by Agarwal (U.S. 5,966,541) to claims 1, 4, 6, 9, 11, 14, 16 and 19 is moot in view of applicant's amendments.
3. The rejection under 35 U.S.C. 103(a) as being unpatentable over Agarwal (U.S. 5,966,541) in view of Brunmeier (U.S. 5,511,164) to claims 2-3, 5, 7-8, 10, 12-13, 15, 17-18 and 20 is moot in view of applicant's amendments.
4. Claims 1-20 have been cancelled.
5. Claims 21-43 have been added.
6. Claims 21-43 are pending.

Response to Amendment

Drawings

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code; and such that when the assertion is false, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed" must be shown or the feature(s) canceled from claims 21, 35 and 43. No new matter should be entered. Particularly, figure 4B shows that when the

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assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code. That is, figure 4B is in ***direct contradiction*** with independent claims 21, 35 and 43. In addition, see page 9, lines 1-7 of the specification for figure 4B's description.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is true" must be shown or the feature(s) canceled from claims 28 and 41. No new matter should be entered. Particularly, figure 4B shows that when the assertion is true, the generated function code performs the steps of: *continuing processing* of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; and *immediately returning* to the generated program code; and returning the hidden failure code to

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the generated program code. That is, figure 4B is in *direct contradiction* with claims 28 and 41.

In addition, see page 9, lines 1-7 of the specification for figure 4B's description.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

9. Claim 35 is objected to because of the following informalities: "means for calling a generated function code by *a* calling generated program code" on lines 3-4 of the claim should be "means for calling a generated function code by calling *a* generated program code".

Appropriate correction is required.

10. Claim 38 is objected to because of the following informalities: it depends on itself.

Appropriate correction is required. Claim 38 is interpreted as depending on claim 37.

Even though claim 39 depends on claim 38, the examiner notes that it should depend on claim 37 because claim 39's corresponding method claim 26 depends on method claim 24, which corresponds to system claim 37. Therefore, the applicant is suggested to change claim 39 to depend on claim 37.

11. Claim 40 is objected to because of the following informalities: "the step of aborting" on line 2 of the claim should be "the means for aborting". Appropriate correction is required.

12. Claim 41 is objected to because of the following informalities: "the step of testing" on line 1 of the claim should be "the means for testing". Appropriate correction is required.

13. Claim 41 is objected to because of the following informalities: "the step of immediately" on line 2 of the claim should be "the means for immediately". Appropriate correction is required.

14. Claim 42 is objected to because of the following informalities: "and the subroutine exists" on line 5 of the claim should be "and to test if the subroutine exists". Appropriate correction is required.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

16. Claims 21-43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 21, 35 and 43, the limitation substantially reciting "testing an assertion in the generated function code, such that when the assertion is true, the generated function code

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performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code; and such that when the assertion is false, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed” is in *direct contradiction* with the specification and the drawings. That is, see page 9, lines 1-7 of the specification and figure 4B for this *direct contradiction*.

Therefore, this limitation is interpreted as testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code.

As per claims 22-34 and 36-42, these claims are rejected for dependency upon rejected parent claims 21 and 35, respectively.

17. Claims 28 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 28 and 41, the limitation substantially reciting “wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is true” is in ***direct contradiction*** with the specification and the drawings. That is, see page 9, lines 1-7 of the specification and figure 4B for this ***direct contradiction***.

Therefore, this limitation is interpreted as wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is false.

18. Claims 21-43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As per claims 21, 35 and 43, the limitation substantially reciting “testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code; and such that when the assertion is false, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed” is in ***direct contradiction*** with the specification and the drawings. That is, see page 9, lines 1-7 of the specification and figure 4B for this ***direct contradiction***.

Therefore, this limitation is interpreted as testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code.

As per claims 22-34 and 36-42, these claims are rejected for dependency upon rejected parent claims 21 and 35, respectively.

19. Claims 28 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As per claims 28 and 41, the limitation substantially reciting “wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is true” is in ***direct contradiction*** with the specification and the drawings. That is, see page 9, lines 1-7 of the specification and figure 4B for this ***direct contradiction***.

Therefore, this limitation is interpreted as wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is false.

20. Claims 21-43 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The feature “testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code” critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

As per claims 21, 35 and 43, the limitation substantially reciting “testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code; and such that when the assertion is false, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed” is in *direct contradiction* with the specification and the drawings. That is, see page 9, lines 1-7 of the specification and figure 4B for this *direct contradiction*.

Therefore, this limitation is interpreted as testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program

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code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code.

As per claims 22-34 and 36-42, these claims are rejected for dependency upon rejected parent claims 21 and 35, respectively.

21. Claims 28 and 41 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The feature “wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is false” critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

As per claims 28 and 41, the limitation substantially reciting “wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is true” is in ***direct contradiction*** with the specification and the drawings. That is, see page 9, lines 1-7 of the specification and figure 4B for this ***direct contradiction***.

Therefore, this limitation is interpreted as wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is false.

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22. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

23. Claims 21-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

24. As per claims 21, 35 and 43, the limitation substantially reciting "testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code; and such that when the assertion is false, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed" is indefinite. That is, this limitation is in *direct contradiction* with the specification and the drawings. Furthermore, see page 9, lines 1-7 of the specification and figure 4B for this *direct contradiction*.

Therefore, this limitation is interpreted as testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code.

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As per claims 22-34 and 36-42, these claims are rejected for dependency upon rejected parent claims 21 and 35, respectively.

25. As per claims 28 and 41, the limitation substantially reciting "wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is true" is indefinite. That is, this limitation is in *direct contradiction* with the specification and the drawings. Furthermore, see page 9, lines 1-7 of the specification and figure 4B for this *direct contradiction*.

Therefore, this limitation is interpreted as wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is false.

26. Claim 35 recites the limitation "means for resetting the hidden failure code in conjunction with inserting the error recovery code into the generated program code" in lines 12-13 of the claim. There is insufficient antecedent basis for this limitation in the claim. This limitation is interpreted as "means for resetting the hidden failure code in conjunction with inserting an error recovery code into the generated program code".

As per claims 36-42, these claims are rejected for dependency upon rejected parent claim 35.

Claim Rejections - 35 USC § 102

27. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

28. Claims 21-24, 28-30, 34-37 and 41-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Agarwal (U.S. 5,966,541).

Per Claim 21 (New, as best understood):

The Agarwal patent discloses:

- **a method of providing recovery from an error condition during initialization of a generated program code** (“The present invention instruments original binary code to create augmented or remediated binary code. The augmented or remediated binary code can then perform many useful functions such as error detecting and repair.” in column 4, lines 40-43)
- **calling a generated function code; testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning**

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the hidden failure code to the generated program code (“A preferred embodiment further comprises generating a data flow representation of the binary code, choosing which values or variables to track, and using the data flow representation to track the chosen values or variables, and to further aid in determining where to install the software patches. ... The control and data flow representations can always be generated from binary code. However, control and data flow representations can also be generated from the source code when the source code is available. ... Referring back to FIG. 1B with the aid of the data flow graph, the next step 83 is to identify or “color” the instructions that potentially use dates or selected arguments. Starting with instructions identified as using dates (or specific arguments) or as being instructions that obtain a date through a program input, data analysis is used to mark or color all the instructions that can be contaminated with a date (or with the specific argument). FIG. 7 shows a colored graph 400 for the case where variable b is a date. In this graph, the hashed codes N2, N3, N4, N5, and N8 correspond to the instructions that may have to be changed.” in column 3, lines 43-52 and column 9, lines 66-67 to column 10, lines 1-9; Identifying/coloring the instructions that potentially use dates or selected arguments is interpreted as generating a hidden failure code/flag. That is, a colored instruction is interpreted as a hidden failure code/flag)

- and inserting an error recovery code into the generated program code when error recovery is enabled and when the hidden failure code is returned, the step of inserting performed by the generated program code (“Again referring to FIG. 1B, the actual rewritings 85, 87, 89 of the binary now takes place. First, the patches are installed 85. Each colored binary instruction is replaced by a set of binary instructions that implement the correct logic. For

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example, the instruction I3, $c=a+b$, is replaced in a manner similar to that described earlier.

Next, branch and jump instructions are modified if their targets have shifted. This is necessary because when a single instruction is replaced with multiple instructions, the length of that segment of code increases. Thus, the addresses of blocks that follow the lengthened block will all be shifted. Therefore, the branches, procedure calls and jumps that reach a given line of code, or target, through a given old address must also be changed to reflect the new shifted address.” in column 10, lines 10-25, error recovery is inherently enabled and a colored instruction indicates a hidden failure code/flag).

Per Claim 22 (New, as best understood):

The Agarwal patent discloses:

- further comprising the step of resetting the hidden failure code, the step of resetting performed in conjunction with the step of inserting the error recovery code into the generated program code (column 10, lines 10-25, a colored instruction is replaced and/or modified, which resets the hidden failure code/flag).

Per Claim 23 (New, as best understood):

The Agarwal patent discloses:

- wherein the step of generating the hidden failure code further comprises generating a hidden failure flag by the generated function code (column 10, lines 10-25).

Per Claim 24 (New, as best understood):

The Agarwal patent discloses:

- wherein the step of inserting the error recovery code further comprises determining if error recovery is enabled, the step of determining performed by the generated program code after the step of returning the hidden failure code (column 10, lines 10-25, error recovery is inherently enabled).

Per Claim 28 (New, as best understood):

The Agarwal patent discloses:

- wherein the step of testing the assertion in the generated function code further comprises the step of immediately returning to the generated program code when the assertion is false (column 3, lines 43-52 and column 9, lines 66-67 to column 10, lines 1-9).

Per Claim 29 (New, as best understood):

The Agarwal patent discloses:

- further comprising the step of compiling a computer program, wherein the steps of calling, testing, generating and inserting are performed during compiling (column 10, lines 10-25).

Per Claim 30 (New, as best understood):

The Agarwal patent discloses:

- further comprising the steps of: detecting if a call to a subroutine exists in the generated program code; and creating an error recovery flag test code to test if error recovery is enabled and to test if the subroutine exists (column 10, lines 10-25).

Per Claim 34 (New, as best understood):

The Agarwal patent discloses:

- further comprising the step of continuing processing of the generated program code, the step of continuing performed after the step of inserting the error recovery code into the generated program code (column 10, lines 10-25).

Per Claim 35:

This is a system version of the claimed method discussed above (claims 21 and 22), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Agarwal.

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Per Claims 36-37:

These are system versions of the claimed method discussed above (claims 23-24, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Agarwal.

Per Claims 41-42:

These are system versions of the claimed method discussed above (claims 28 and 30, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Agarwal.

Per Claim 43:

This is a computer-readable medium version of the claimed system discussed above (claims 35 and 36), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Agarwal.

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claims 25-27, 31 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal (U.S. 5,966,541) in view of Brunmeier (U.S. 5,511,164).

Per Claim 25 (New, as best understood):

The rejection of claim 24 is incorporated, and further, Agarwal does not explicitly teach the step of determining if error recovery is enabled further comprises the step of aborting when error recovery is disabled. Brunmeier teaches the step of determining if error recovery is enabled further comprises the step of aborting when error recovery is disabled (column 30, lines 25-27).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include the step of determining if error recovery is enabled further comprises the step of aborting when error recovery is disabled using the teaching of Brunmeier. The modification would be obvious because one of ordinary skill in the art would be motivated to exit a program if a fatal error is detected (Brunmeier, column 30, lines 25-27 and see Fig. 17, items 1428 and 1430).

Per Claim 26 (New, as best understood):

The rejection of claim 24 is incorporated, and further, Agarwal does not explicitly teach wherein the step of determining if error recovery is enabled further comprises the step of exiting the generated program code when error recovery is disabled. Brunmeier teaches wherein the step of determining if error recovery is enabled further comprises the step of exiting the generated program code when error recovery is disabled (column 30, lines 25-27).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include wherein the step of determining if error recovery is enabled further comprises the step of exiting the generated

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program code when error recovery is disabled using the teaching of Brunmeier. The modification would be obvious because one of ordinary skill in the art would be motivated to exit a program if a fatal error is detected (Brunmeier, column 30, lines 25-27 and see Fig. 17, items 1428 and 1430).

Per Claim 27 (New, as best understood):

The rejection of claim 21 is incorporated, and further, Agarwal does not explicitly teach the step of aborting when error recovery is disabled, the step of aborting performed by the generated program code. Brunmeier teaches the step of aborting when error recovery is disabled, the step of aborting performed by the generated program code (column 30, lines 25-27).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include the step of aborting when error recovery is disabled, the step of aborting performed by the generated program code using the teaching of Brunmeier. The modification would be obvious because one of ordinary skill in the art would be motivated to exit a program if a fatal error is detected (Brunmeier, column 30, lines 25-27 and see Fig. 17, items 1428 and 1430).

Per Claim 31 (New, as best understood):

The rejection of claim 21 is incorporated, and further, Agarwal does not explicitly teach the step of generating code to conditionally skip a program abort code and an error recovery flag code when the hidden failure code exists and error recovery is not enabled. Brunmeier teaches the step of generating code to conditionally skip a program abort code and an error recovery flag

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code when the hidden failure code exists and error recovery is not enabled (column 30, lines 25-27).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include the step of generating code to conditionally skip a program abort code and an error recovery flag code when the hidden failure code exists and error recovery is not enabled using the teaching of Brunmeier. The modification would be obvious because one of ordinary skill in the art would be motivated to reduce execution time of program.

Per Claims 38-40:

These are system versions of the claimed method discussed above (claims 25-27, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

31. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal (U.S. 5,966,541) in view of Veldhuizen (U.S. 5,835,771).

Per Claim 32 (New, as best understood):

The rejection of claim 21 is incorporated, and Agarwal further teaches the step of inserting an error recovery code into the generated program code (column 10, lines 10-25). Agarwal does not explicitly teach the step of inserting code between a #pragma recover if statement and a #pragma recover end statement. The background art of Veldhuizen teaches the

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step of inserting code between a `#pragma recover if` statement and a `#pragma recover end` statement (column 2, lines 40-58).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include the step of inserting code between a `#pragma recover if` statement and a `#pragma recover end` statement using the teaching of Veldhuizen. The modification would be obvious because one of ordinary skill in the art would be motivated to use a well-known preprocessor directive to inform the compiler to perform an action specified by the directive, such as aborting (Veldhuizen, column 2, lines 52-54).

Per Claim 33 (New, as best understood):

The rejection of claim 21 is incorporated, and Agarwal further teaches the step of inserting an error recovery code into the generated program code (column 10, lines 10-25). Agarwal does not explicitly teach the step of inserting code between a `#pragma recover else` statement and a `#pragma recover end` statement. The background art of Veldhuizen teaches the step of inserting code between a `#pragma recover else` statement and a `#pragma recover end` statement (column 2, lines 40-58).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Agarwal to include the step of inserting code between a `#pragma recover else` statement and a `#pragma recover end` statement using the teaching of Veldhuizen. The modification would be obvious because one of ordinary skill in the art would be motivated to use a well-known preprocessor directive to inform the

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compiler to perform an action specified by the directive, such as aborting (Veldhuizen, column 2, lines 52-54).

Response to Arguments

32. Applicant's arguments with respect to claims 21-43 have been fully considered but they are not persuasive.

In the remarks, the applicant argues that:

a) Accordingly, Applicant believes that Agarwal fails to disclose, for example, the features of “testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: generating a hidden failure code; ***returning*** to the generated program code; ***and returning the hidden failure code*** to the generated program code” as recited claim 21 (**emphasis added**). Nor does Agarwal disclose, teach or suggest an alternative embodiment, “step of generating a hidden failure code further comprises generating a hidden failure flag by the generated function” (as recited in claim 22).

Examiner's response:

a) Examiner strongly disagrees with applicant's assertion that Agarwal fails to disclose the claimed limitations recited in claims 21 and 22. Agarwal clearly shows each and every limitation in claims 21 and 22.

As per claim 21, the limitation substantially reciting “testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning

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the hidden failure code to the generated program code; and such that when the assertion is false, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed” is *interpreted* as testing an assertion in the generated function code, such that when the assertion is true, the generated function code performs the steps of: continuing processing of the generated function code; and returning to the generated program code when the processing of the generated function code is completed; and such that when the assertion is false, the generated function code performs the steps of: generating a hidden failure code; returning to the generated program code; and returning the hidden failure code to the generated program code, which is taught by Agarwal (column 3, lines 43-52 and column 9, lines 66-67 to column 10, lines 1-9; Identifying/coloring the instructions that potentially use dates or selected arguments is *interpreted* as generating a hidden failure code/flag. That is, a colored instruction is interpreted as a hidden failure code/flag).

Furthermore, claim 22 does not recite “wherein the step of generating the hidden failure code further comprises generating a hidden failure flag by the generated function code”. **Claim 23** recites “wherein the step of generating the hidden failure code further comprises generating a hidden failure flag by the generated function code”, which is taught by Agarwal (column 10, lines 10-25).

In addition, see the rejection above in paragraph 28 for rejection to claims 21, 22 and 23.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

34. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (703) 305-7699. The examiner can normally be reached on Mondays through Thursdays from 9:00 AM to 6:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone number for the organization where this application or processing is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

QN *LN*
March 4, 2004

Kakali Chaki

**KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
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